



Confirmation No. 3586

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicants: Wollenberg et al. Examiner: M. Wallenhorst  
Serial No.: 10/699,507 Group: Art Unit 1743  
Filing Date: October 31, 2003 Docket: T-6298D (538-63)  
For: HIGH THROUGHPUT SCREENING Dated: November 16, 2007  
METHODS FOR LUBRICATING OIL  
COMPOSITIONS

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL OF REQUEST FOR REHEARING UNDER 37 C.F.R. §41.52**

Sir:

Enclosed please find REQUEST FOR REHEARING UNDER 37 C.F.R. §41.52.

Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.17 to Deposit Account No. 50-3591. Also, in the event any additional extensions of time are required, please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-3591. TWO (2) COPIES OF THIS SHEET ARE  
ENCLOSED.

Respectfully requested.

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Alexandria, VA 22313-1450

**REQUEST FOR REHEARING UNDER 37 C.F.R. §41.52**

Sir:

In response to the decision rendered by the Board of Patent Appeals and Interferences (“Board”) mailed September 20, 2007, Appellants respectfully request a rehearing of the decision affirming the rejection under 35 U.S.C. §103 (a) of (1) appealed Claim 43 as obvious over Kolosov et al. in view of O’Rear and Tolvanen et al.; (2) appealed Claims 1-9, 18-29 and 38 as obvious over Kolosov et al. in view of O’Rear and Tolvanen et al.; (3) appealed Claims 10-13, 30-33 and 44-45 as obvious over Kolosov et al. in view of O’Rear or Tolvanen et al. and further in view of Garr et al.; and (4) appealed Claims 14-17 and 34-37 as obvious over Kolosov et al. in view of O’Rear or Tolvanen et al. and further in view of Smrcka et al. The following comments are respectfully submitted in order to address the points believed to be misapprehended or overlooked by the Board.

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Dated: November 16, 2007

Bridget Griffin

A.Appealed Claim 43 is non-obvious over  
Kolosov et al. and O'Rear or Tolvanen et al.

First, with respect to the following statement regarding appealed Claim 43 as obvious over Kolosov et al. in view of O'Rear or Tolvanen et al., in the paragraph beginning on line 4 of page 15 of the Board's decision:

"The Appellants argue that Kolosov and Tolvanen do not disclose or suggest a system for screening lubricating oil compositions comprising (a) a major amount of at least one base oil of lubricating viscosity and (b) a minor amount of at least one lubricating oil additive. The Appellants also argue that Tolvanen does not disclose or suggest a testing station that includes a light source and a photocell aligned with the light source for measuring storage stability in a lubricating oil sample. ....

Significantly, the Appellants have failed to explain why the light source 11 and indicator/photocell 14 are not 'aligned' in the Tolvanen device. Furthermore, it is of no moment that Tolvanen does not disclose that the oil compositions tested comprise a major amount of a base oil of lubricating viscosity and a minor amount of a lubricating oil additive. Based on the record before us, it is reasonable to find that the lubricant compositions disclosed in Kolosov include lubricant compositions containing an additive. Kolosov does not expressly disclose that the lubricant compositions comprise a major amount of a base oil of lubricating viscosity and a minor amount of a lubricating oil additive. However, the record before us establishes that one of ordinary skill in the art would have understood 'additive' to mean any substance incorporated into a base material, usually in a low concentration. See The Condensed Chemical Dictionary at 20; see also O'Rear, paras. [0002] and [0046]; Gatto, para. [0051]. We find that one of ordinary skill in the art would have reasonably expected the lubricant compositions in Kolosov, comprising a lubricant and an additive, to have a major amount of a base oil and a minor amount of an additive."

and in the paragraph beginning on line 19 of page 16 through line 11 of page 17:

"Finally, the Appellants argue that the Examiner has failed to establish that Tolvanen provides a 'teaching, motivation or suggestion' for modifying Kolosov to arrive at the claimed invention. Appeal Brief at 26.

Kolosov discloses a high throughput system for measuring numerous properties of lubricant compositions, including viscosity, thermal degradation, aging characteristics, and agglomeration or assemblage of molecules. We find that one of ordinary skill in the art would have found these properties useful in determining the storage stability of lubricant compositions. Tolvanen also discloses a system for measuring the storage stability of oil samples. Based on the record before us, we find that it would have been reasonable for one of ordinary skill in the art to employ the system disclosed in Tolvanen as an alternative means for measuring the storage stability of lubricant compositions in Kolosov. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982) ('Express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious.')

For the reasons set forth above, it is reasonable to conclude that the invention of claim 43 would have been obvious to one of ordinary skill in the art in view of the combined teachings of at least Kolosov and Tolvanen."

Appellants respectfully believe that the following points were misapprehended or overlooked. First, contrary to the statement by the Board that a lubricant composition would be expected to have a major amount of a base lubricant oil and a minor amount of an additive, Appellants have clearly shown that a lubricating oil composition can be a concentrate that contains *a major amount of a lubricating oil additive and a minor amount of base oil of lubricating viscosity* as a diluent for the concentrate, e.g., see Mortier et al., Chemistry and Technology of Lubricants, 2<sup>nd</sup> Edition, Blackie Academic & Professional, page 88 (1997), a copy of which is attached, which shows that an additive such as an ashless dispersant can be present in a lubricating oil composition concentrate in an amount of 60% together with a base oil. Moreover, Appellants have also shown that a lubricant can be a grease, jelly, e.g., K-Y jelly or petroleum jelly, as well as powders, e.g., dry graphite, PTFE, etc., formulated with water. Thus, a lubricating oil composition would not necessarily be expected by one of ordinary skill in the art to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive each and every time.

Second, the combined teachings of Kolosov et al. and Tolvanen et al. do not render Claim 43 obvious. It is acknowledged by the Examiner that Kolosov et al. do not disclose a system which measures the storage stability in a lubricating oil sample to obtain storage stability data associated with the sample in a testing station containing a light source and a photocell aligned with the light source. Tolvanen et al., on the other hand, disclose a device for determining the stability or storability of heavy oil fractions derived from petroleum or of their mixtures, wherein the stability of oil is determined by measuring the intensity of light scattering from the oil surface, when an asphaltene-flocculating liquid is added to the oil sample for determining the stability of the oil. To measure the intensity of light scattering from the oil surface as disclosed in Tolvanen et al., the light source and prism cannot possibly be aligned with each other (which explains why the light source 11 and indicator/photocell 14 are not ‘aligned’ in the Tolvanen device). This is specifically set forth in Tolvanen et al. in Figures 1-3, as well as throughout the reference.

In contrast thereto, the system to screen lubricating oil composition samples for storage stability set forth in appealed Claim 43 contains a testing station which includes a light source and a photocell aligned with the light source for measuring storage stability in the respective sample. The only way to measure storage stability when the photocell is aligned with the light source is to pass the light through the sample. This is clearly set forth in the specification in the paragraph bridging pages 20 and 21:

“System 200 includes means 210 for holding and optionally moving a plurality of test receptacles 212 mounted to a frame 211. In one embodiment a light source 221 is disposed on one side of frame 211 and a photocell 222 is disposed on the opposite side of frame 211 opposite, and aligned with, the light source such that a light beam emitted by the light source 221 can be detected and measured by the photocell 222. *In this embodiment, photocell 222 measures the light transmitted through the sample.*” [Emphasis added]

As such, the system as claimed is *completely different* from the system disclosed in Tolvanen et al. Therefore, one skilled in the art would not even arrive at the presently claimed system by combining the system disclosed in Tolvanen et al. with the system of Kolosov et al.

For the foregoing reasons, Appellants respectfully submit that appealed Claim 43 is not obvious over the combined teachings of Kolosov et al. in view of Tolvanen et al. Since the Board did not consider O'Rear in the Decision, no discussion of O'Rear is considered necessary in obtaining an allowance of Claim 43. Thus, appealed Claim 43 is allowable.

B. Appealed Claims 1-9, 18 and 19 are non-obvious over Kolosov et al. and O'Rear or Tolvanen et al.

First, with respect to the rejection of appealed Claims 1-9, 18 and 19 as obvious over Kolosov et al. in view of O'Rear or Tolvanen et al., it is respectfully submitted that a discussion of O'Rear and Tolvanen et al. is unnecessary as the Board has removed these references from consideration in determining whether appealed Claims 1-9, 18 and 19 are obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. This is clearly set forth in the paragraph beginning on line 18 of page 17 of the Board's decision:

“Claim 1 is not limited to measuring storage stability by measuring the formation of sediment. Therefore, it is not necessary to consider the teachings of O'Rear and Tolvanen in connection with the step of measuring storage stability recited in claim 1.”

Second, with respect to the following statement regarding appealed Claim 1 as obvious over Kolosov et al., in the paragraph beginning on line 3 of page 18 of the Board's decision:

“Significantly, Kolosov discloses that the invention can be used to screen lubricants. Kolosov, para. [0042]. Kolosov also discloses that the invention can be used to analyze the relative or comparative effects that an additive has upon a particular flowable material, e.g., the effects of a detergent, a flow modifier, or the like. Kolosov, para. [0043].

Based on these teachings, we find that Kolosov would have reasonably suggested to one of ordinary skill in the art that the disclosed method is useful for testing lubricants containing an additive. For this reason, it is obvious to conclude that the method of claim 1 would have been obvious to one of ordinary skill in the art in view of the teachings of Kolosov.”

Appellants respectfully believe that the following points were misapprehended or overlooked. Appellants employ a high throughput method to screen lubricating oil additive samples for storage stability of each sample to provide storage stability data by maintaining each sample at a

*predetermined temperature for a predetermined time*, measuring the storage stability of each sample to provide storage stability data for each sample, and outputting the results. In contrast, Kolosov et al. only disclose that the invention can be used to screen a lubricant for a variety of properties and provides no suggestion or motivation in Kolosov et al. of obtaining storage stability data by maintaining each sample at a predetermined temperature for a predetermined time and measuring the storage stability of each sample in a high throughput method. Thus, one skilled in the art would not even look to the disclosure of Kolosov et al. to modify the method disclosed therein and arrive at the presently recited method of appealed Claim 1.

For the foregoing reasons, Appellants respectfully submit that appealed Claims 1-9, 18 and 19 are not obvious over Kolosov et al. Thus, appealed Claims 1-9, 18 and 19 are allowable.

C. Appealed Claims 20-29 and 38 are non-obvious over Kolosov et al. and O'Rear or Tolvanen et al.

First, with respect to the rejection of appealed Claims 20-29 and 38 as obvious over Kolosov et al. in view of O'Rear or Tolvanen et al., it is respectfully submitted that a discussion of O'Rear and Tolvanen et al. is unnecessary as the Board has removed these references from consideration in determining whether appealed Claims 20-29 and 38 are obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. This is clearly set forth in the paragraph beginning on line 20 of page 18 of the Board's decision:

“Claim 20 is not limited to measuring storage stability by measuring the formation of sediment. Therefore, it is not necessary to consider the teachings of O'Rear and Tolvanen in connection with the step of measuring storage stability recited in claim 20.”

Second, with respect to the following statement regarding appealed Claim 1 as obvious over Kolosov et al., in the paragraph beginning on line 17 of page 19 of the Board's decision:

“Kolosov does not expressly disclose that the lubricants comprise a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. However, the record before us establishes that one of ordinary skill in the art would have understood ‘additive’ to mean any substance incorporated into a base material, usually in a low concentration. See The Condensed Chemical Dictionary at 20; see

also O'Rear, paras. [0002] and [0046]; Gatto, para. [0051]. We find that one of ordinary skill in the art would have reasonably expected the lubricant compositions in Kolosov, comprising a lubricant and an additive, to have a major amount of a base oil and a minor amount of an additive."

and in the paragraph beginning on line 1 of page 20:

"Finally, Kolosov discloses that the high throughput method can be used to measure a number of properties, including viscosity, thermal degradation, aging characteristics, and agglomeration or assemblage of molecules. Kolosov, para. [0065]. We find that one of ordinary skill in the art would have found these properties useful in determining the storage stability of lubricant compositions.

For the reasons set forth above, it is reasonable to conclude that the method of claim 20 would have been obvious to one of ordinary skill in the art in view of the teachings of at least Kolosov."

Appellants respectfully believe that the following points were misapprehended or overlooked. First, contrary to the statement by the Board that a lubricant composition would be expected to have a major amount of a base lubricant oil and a minor amount of an additive, Appellants have clearly shown that a lubricating oil composition can be a concentrate that contains *a major amount of a lubricating oil additive and a minor amount of base oil of lubricating viscosity* as a diluent for the concentrate, e.g., see Mortier et al., Chemistry and Technology of Lubricants, 2<sup>nd</sup> Edition, Blackie Academic & Professional, page 88 (1997), a copy of which is attached, which shows that an additive such as an ashless dispersant can be present in a lubricating oil composition concentrate in an amount of 60% together with a base oil. Moreover, Appellants have also shown that a lubricant can be a grease, jelly, e.g., K-Y jelly or petroleum jelly, as well as powders, e.g., dry graphite, PTFE, etc., formulated with water. Thus, a lubricating oil composition would not necessarily be expected by one of ordinary skill in the art to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive each and every time.

Second, Appellants employ a high throughput method to screen lubricating oil composition samples for storage stability of each sample to provide storage stability data by maintaining each sample at a *predetermined temperature for a predetermined time*; measuring the storage stability of each sample to provide storage stability data for each sample; and outputting the results. In contrast, Kolosov et al. only disclose that the invention can be used to screen a lubricant for a variety of properties and provides no suggestion or motivation in Kolosov et al. of obtaining storage stability data by maintaining each sample at a predetermined temperature for a predetermined time and measuring the storage stability of each sample in a high throughput method. Thus, one skilled in the art would not even look to the disclosure of Kolosov et al. to modify the method disclosed therein and arrive at the presently recited method of appealed Claim 20.

For the foregoing reasons, Appellants respectfully submit that appealed Claims 20-29 and 38 are not obvious over Kolosov et al. Thus, appealed Claims 20-29 and 38 are allowable.

D. Appealed Claims 10-13, 30-33 and 44-45 are non-obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. and further in view of Garr et al.

With respect to the rejection of appealed Claims 10-13, 30-33 and 44-45 as obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. and further in view of Garr et al., the misapprehended or overlooked deficiencies of Kolosov et al. discussed above with respect to appealed Claims 1 and 20, from which Claims 10-13 and 30-33 ultimately depend, apply with equal force to this rejection. Garr et al. do not cure the deficiencies of Kolosov et al. Specifically, Garr et al. do not disclose any automated storage stability testing of any material. Rather, Garr et al. simply disclose employing a bar code to identify individual containers. Thus, one skilled in the art would not even look to Garr et al. to arrive at the presently recited method set forth in appealed Claims 1 and 20, from which Claims 10-13 and 30-33 ultimately depend, by combining of Kolosov et al. with Garr et al. with any expectation of success. Only by using Appellants' disclosure as a guide has the Examiner been able to piece together the claimed invention which employs an automatic high throughput method to rapidly analyze and screen a diverse number of lubricating oil compositions for storage stability data.

For the foregoing reasons, Appellants respectfully submit that appealed Claims 10-13, 30-33 and 44-45 are not obvious over Kolosov et al. in view of Garr et al. Thus, appealed Claims 10-13, 30-33 and 44-45 are allowable.

E. Appealed Claims 14-17 and 34-37 are non-obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. and further in view of Smrcka et al.

With respect to the rejection of appealed Claims 14-17 and 34-37 as obvious over Kolosov et al. in view of O'Rear or Tolvanen et al. and further in view of Smrcka et al., the misapprehended or overlooked deficiencies of Kolosov et al. discussed above with respect to appealed Claims 1 and 20, from which Claims 14-17 and 34-37 ultimately depend, apply with equal force to this rejection. Smrcka et al. do not cure the deficiencies of Kolosov et al. Specifically, Smrcka et al. do not disclose any automated storage stability testing of any material. Rather, Smrcka et al. simply disclose storing test results in a data carrier. Thus, one skilled in the art would not even look to Smrcka et al. to arrive at the presently recited method set forth in appealed Claims 1 and 20, from which Claims 14-17 and 34-37 ultimately depend, by combining Kolosov et al. with Smrcka et al. with any expectation of success. Only by using Appellants' disclosure as a guide has the Examiner been able to piece together the claimed invention which employs an automatic high throughput method to rapidly analyze and screen a diverse number of lubricating oil compositions for storage stability data.

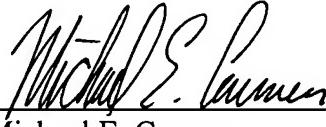
For the foregoing reasons, Appellants respectfully submit that appealed Claims 14-17 and 34-37 are not obvious over Kolosov et al. in view of Smrcka et al. Thus, appealed Claims 14-17 and 34-37 are allowable.

E. Appealed Claims 39-42

It is noted with appreciation the Board's reversal of the rejection of Claims 39-42 under 35 U.S.C. §102(e) as being anticipated under Kolosov et al. It is respectfully submitted that Appellants have not had a fair opportunity to reply to any position the Examiner may have taken with respect to a rejection of appealed Claim 39 under 35 U.S.C. §103(a) as appellants have been consistently arguing throughout prosecution the rejection based on anticipation. As set forth in MPEP §706.02(j) "It is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity

to reply." As clearly is the case here, Appellants' have not had a fair opportunity to reply to any position the Examiner may have taken with respect to Appellants' arguments in connection with appealed independent Claim 39 under 35 U.S.C. §103(a). Accordingly, it is respectfully requested that at the very least prosecution be reopened with respect to appealed Claim 39.

Dated: November 16, 2007

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Attachment

# **Chemistry and Technology of Lubricants**

**Second edition**

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presence of water in gasoline engine low-temperature stop-and-go operation accelerates the contaminant drop-out process. Dispersants are a vital component in gasoline engine oils and are also used to advantage in diesel engine oils to suspend harmful soot contaminants in order to provide longer engine life between overhauls. Diesel engine oil temperatures are generally sufficiently high enough to vaporize water from the oil.

Ashless dispersants are designed to have their polar chemical heads attached to rather large hydrocarbon groups. As shown in Figure 3.11 these polar heads interact with sludge. The hydrocarbon groups provide the solubilizing action which maintains the potentially harmful debris in suspension in the oil. By use of an engine oil well-fortified with a dispersant additive, as well as by practicing engine manufacturers' oil drain recommendations, virtually all of the harmful deposit-forming debris is removed from the engine when the oil is periodically drained.

There are four different types of ashless dispersants: (1) succinimides, (2) succinate esters, (3) Mannich types, and (4) phosphorus types. As with detergents, dispersants are used in a variety of automotive and industrial oils, whilst combinations of dispersant types are often used in lubricant formulations. This discussion will emphasize dispersant use in engine oils.

Most dispersants currently in use are prepared from polyisobutylenes of 1000 to 10 000 molecular weight. Their polar functionality arises from amino and/or hydroxyl (alcohol) groups. The connecting groups, in most cases, are either phenols or succinic acids. The products with succinic acid groups are called alkenyl succinimides and succinate esters. The products from phenols are alkyl hydroxybenzyl polyamines (also called Mannich dispersants because of the name of the German chemist who discovered the method of preparation). These materials are generally processed as 40 to 60% concentrates in base oil.

Both the succinimides and the succinate esters are derived from the same chemical intermediate. The preparation of this intermediate is shown in Figure 3.12. Polyisobutylene is reacted with maleic anhydride to form polyisobutetyl succinic anhydride. This material is often referred to as 'PIBSA'. In the formation of succinimides, the PIBSA is reacted with a polyamine to form a structurally complex mixture which can contain imide, amide, imidazoline, diamide, and amine salt.

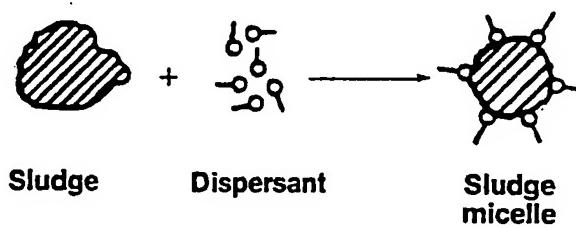


Figure 3.11 Sludge dispersion.

The p-ethylene  
cinimide  
nitrogen  
selectior  
the poly  
polyisot

Figur  
polyisol  
succinat  
acid mc  
free (un

Amin  
(Figure  
oxazoli  
takes pl

PIB-